Federal Ministry
of Education
and Research

Sustainability in Everyday Working Life

Vocational Training for Sustainable Development

Contents

1 VETSD = Vocational Education an Training for Sustainable Development known by its German abbreviation of BBNE

Preface

By taking responsible action today we are protecting the livelihood of future generations. Everyone is called upon to become involved and we must consider where and how we can adapt our behaviour and our way of thinking. What we need therefore is a change of mindset in society, a paradigm change.

We can only master this challenge through education and this is why I support the "Education for Sustainable Development" global action programme. After all, education is not only the key to self-realization and societal participation; it is also the basis for questioning everyday patterns of behaviour.

Vocational education and training are a key component in the educational careers of many young people. In the course of their training, young people can learn for example when and how it makes sense to use renewable resources in the production of goods and when and which means of transport are most suitable taking ecological and economic considerations into account. They can also learn how to market sustainably produced goods, paying due consideration to the wishes of the customer. However, this presupposes that instructors possess the necessary know-how. We must therefore also encourage continuing training for instructors and a sustainable approach on the part of training venues. This approach covers the quality of training, human resources development, cooperation between staff and individual working fields, the promotion of health, the reconciliation of family and work, social commitment on the part of companies, active environmental protection and many other factors.

"Sometimes you just need a different mindset," is how one instructor described the implementation of sustainable practices in everyday working life. This brochure presents examples of how change can be achieved. Instructors, trainees and teachers at vocational schools describe in striking terms their experiences with project work under the "Vocational Education and Training for Sustainable Development" funding priority. They are acting sustainably out of conviction. I would be delighted if I could convince you to join in this effort!

Prof. Dr. Johanna Wanka
Federal Minister of Education and Research

The Environmental Protection Working Group is made up of staff from various fields and is responsible for determining the environmental targets of the LWL[2] clinic.

Teaching the benefits of sustainable work and life styles

How the LWL clinic is achieving the social, economic and ecological aims of sustainable development.

The organic apple juice that the LWL clinic produces from its own apple trees is sweet and strong. But the clinic's site in Münster does not only provide a taste of sustainability, it also allows one to see, hear and feel it: solar panels on the roofs, a huge compost heap in the market garden, energy-saving measures on the wards and the sensory experience of a bare-foot path amidst age-old trees.

Thomas Voß, Head of the Budget, Maintenance and Technology Department, and his colleagues have been introducing sustainability step-by-step since 1999. It all began with the EMAS (Eco-Management and Audit Scheme) certification. The LWL clinic was the first psychiatric hospital to be certified according to strict environmental standards. Even today, only 24 out of over 2,000 clinics have EMAS certification. "It's virtually a unique selling point," says Voß.

Voß approaches the topic of sustainability strategically and with great patience. No commands, no preaching. His motto is to lead by example and encourage people to reflect. It is a matter of showing people the benefits of sustainable work and life styles. The kitchen staff, for example, were initially sceptical about increasing the share of organic products they use.

Today 20 percent of the products used in the canteen are organic, with an upward trend. Mass-produced turkey is off the menu, measures are taken to avoid garbage and save energy and the share of food waste is low. Over 70 percent of the canteen users say that they are satisfied. This means that the effort is also paying off in monetary terms.

2 Regional Association of Westphalia-Lippe

Voß is a doer, not someone who is only interested in what looks good on paper. Members of staff often come up with good ideas. These are tested and, if successful, applied to all branches of the clinic. For example, a pilot scheme is currently being tested at the clinic's Rheine branch. The aim is to stop using bottled mineral water as drinking water and instead use tap water. The quality of tap water is in any case often better than that of bottled water.

Voß emphasizes that sustainability is not a "one-man show". He receives substantial support from the Environmental Protection Working Group, where interested colleagues ranging from gardeners to doctors meet regularly to set annual environmental targets. "We spend so much time at work. Here we can be creative and act as internal and external multipliers," says Angelika Ospald, a member of the Working Group.

> *"Lead by example and encourage people to reflect."*
>
> Thomas Voß, Head of the Budget, Maintenance and Technology Department

A great deal can be achieved by working together. Staff members like Jesko Schüttemeyer also act as multipliers. The LWL clinic strongly believes that sustainability also means social sustainability. When Schüttemeyer was unable to continue his work as a gardener due to health reasons, the clinic helped him to look for alternative opportunities and finally retrained him as fire prevention officer. This motivated Schüttemeyer, who is now absolutely committed to his new job. The clinic in turn profits from staff motivation in the long term. Schüttemeyer's innovative fire protection scheme has just won first place in the ideas competition among the LWL's 14,000 members of staff. The social aspect of sustainability is also demonstrated by the child-care facility, which has been built specially on the site of the clinic and where all members of staff can enrol their under-three year-olds.

Thomas Voß emphasizes that questions of sustainability are standard elements in all training courses from the very start. This also has an influence on the clinic's trainees.

Trainees working in the clinic's own market garden learn resource-saving methods.

Kristina Haberlach, 21, is in her second year of training to become a medical administrative assistant. She appreciates the fact that she has been allowed to independently collate practical tips for colleagues on topics such as "environmentally friendly travel" or "doing without plastic bags". Janine Draper, 21, is in her third year of training to become a gardener. "We don't simply spray chemicals," she notes. For her it is only natural to switch off lights during breaks and collect rainwater to water the clinic's sweet peppers, tomatoes or dahlias. Simon Gräber, a plant mechanic in the technical workshop, knows that it is better to use solvent-free paints if you want to carry on working and stay healthy for the next forty years. Occupational safety often goes hand-in-hand with environmental protection.

All trainees are taught the knowledge, skills and determination to work sustainably from the very start. Thomas Voß stresses that "the best staff are those people we train ourselves because they suit us best". He says that the clinic's trainees are often eyed with amazement when they raise issues of sustainability during their classes at vocational schools. Voß therefore plans to involve the vocational schools to a greater extent in future. He is cooperating with the Münster School of Vocational Education to develop curricula which will firmly establish sustainability issues in teaching at vocational schools.

Over the years, sustainability has become part of the clinic's entrepreneurial culture. The "anniversary trees" are just one indication that this topic has reached both staff and managerial levels alike. Members of staff celebrating their 25th or 40th service anniversary can have a tree of their choice planted on the clinic's site with a plaque bearing their name. This initiative is so popular that space in the 270,000 m^2 park is gradually becoming scarce.

Sustainability has an attractive influence

The RHEIN-ERFT ACADEMY (REA) proves that sustainability is invaluable for the company and its trainees.

It attracts everyone's attention: Michael Maier, Managing Director of the REA, is proud of the shining solar cooker in the House of Sustainability at the RHEIN-ERFT ACADEMY, saying that the device has a magical attraction for trainees and visitors alike.

The principle of the solar cooker is simple: Mirrors catch sunbeams and focus them on a single point. The energy thus gained can grill a sausage at over 200 °C in just a few minutes. "Is that really possible without using electricity," the trainees ask in amazement.

"It doesn't need any electricity," Maier chuckles with pleasure. For him the solar cooker is a good example of the three dimensions of sustainability: The ecological dimension means that it uses solar energy; the economic dimension means that no expenses are incurred – apart from the cost of the assembly kit – and the social dimension involves trainees assembling the cooker with school students visiting the academy to find out more about training schemes in the chemical industry.

Sustainability as project work: The solar cooker is assembled by trainees and school students.

"Start off small and use success as the motivation for further steps."

Managing Director Michael Maier

What is more, the solar cooker will soon help people in developing countries to cook without using fossil fuels. "This motivates the young people because their work is meaningful," says Maier. He goes on to explain that nothing is more absurd from the educational point of view than trainees producing work that simply lands in the rubbish bin.

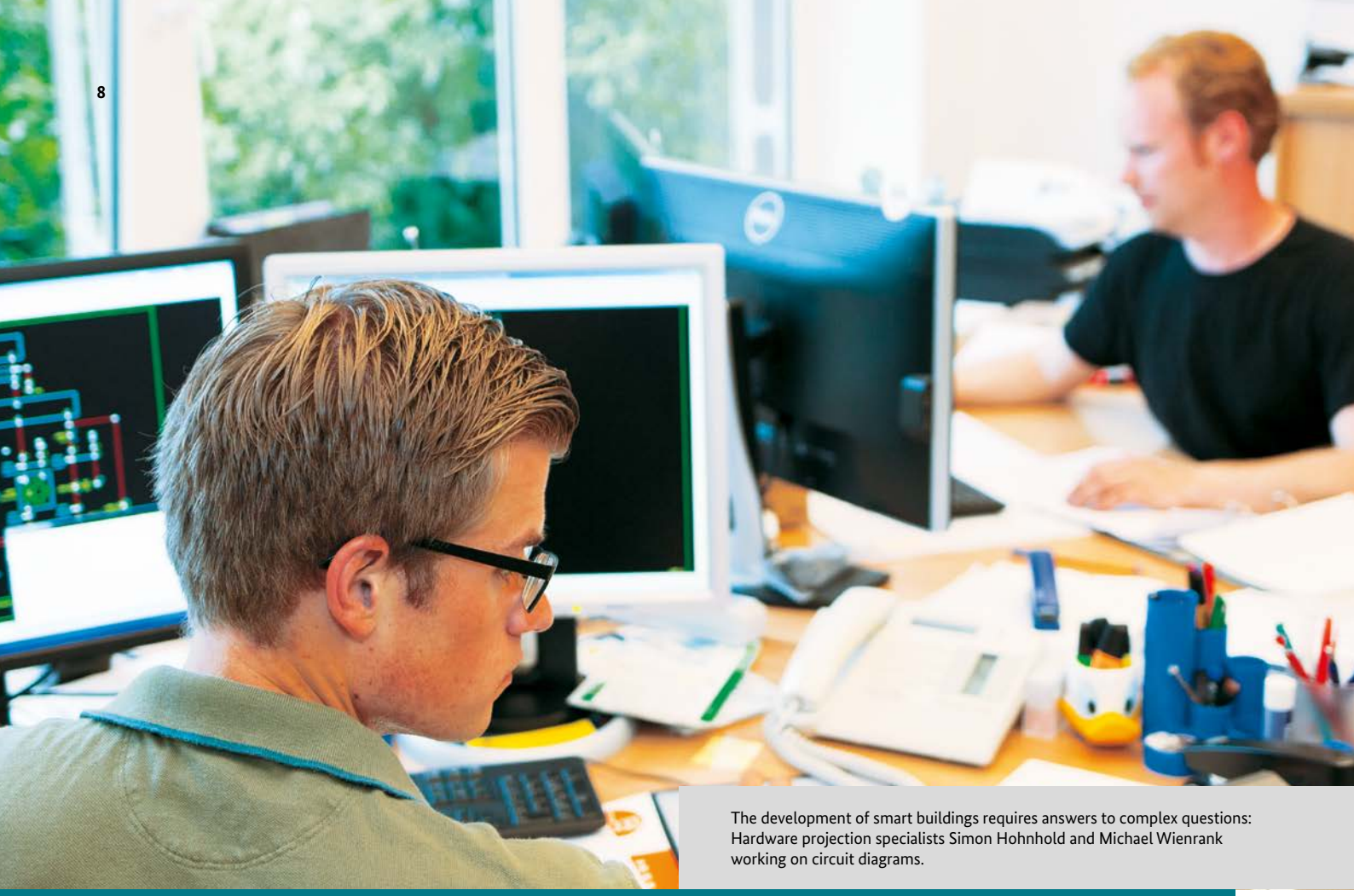
Nevertheless, Maier himself had initial problems with the topic of sustainability. The penny didn't drop until he realized that sustainability means future viability. Training programmes must be attractive – and the trainees should find the topic immediately inspiring. Industry needs well-trained specialized labour – and the academy provides staff who have learned the benefits of saving resources and protecting the environment from scratch. The chemical industry in particular must accept societal responsibility – and the REA shows how this can be done in concrete terms.

Maier is now so convinced of the importance of sustainability that the REA's mission statement has been extended to provide a sound basis for expanding this approach, including sustainability in training.

Trainees in all areas learn how to protect resources: They have built the House of Sustainability, where the solar cooker is located. The building is an outstanding example of energy-saving insulation and heating technologies. Chemicals used at the REA's technical centre, the so-called Technikum, are not simply disposed of as waste but re-used for the next production batch. This is not only environmentally compatible, it also saves money.

Managing Director Michael Maier stresses that it must be second nature for the trainees to think and work sustainably. This is particularly important when they leave the ideal world of training and encounter the realities of working life, where the motto is often: "That's how we've always done things. We're not making any changes." Maier is certain that his trainees are so convinced of what they are doing that they are not disconcerted by this type of reaction.

His advice to trainees is: "Start off small and use success as the motivation for further steps. Win over everyone in the company." According to Maier, sustainability is an invaluable asset. Everyone using this asset sees its benefits.



The development of smart buildings requires answers to complex questions: Hardware projection specialists Simon Hohnhold and Michael Wienrank working on circuit diagrams.

“Openness, consistency and good staff”

Harald Meyer could not possibly have imagined what he was setting in motion when he established his electrical engineering company as a garage business in his native village of Brettorf near Oldenburg in 1977. He was laying the foundations for what is now, 37 years later, a strong company and a pioneer in the field of sustainability.

Meyer names three important factors for this success: Openness, consistency and good staff.

Harald Meyer’s philosophy is that anyone taking up the cause of sustainability must live their everyday life according to its principles. Now 64 years-old and senior partner in the Meyer Group, Meyer believes that it is important to translate existing knowledge into action, for example in order to streamline processes and increase value added. “For me, that’s sustainability, particularly when we are supporting forward-looking topics such as energy efficiency and smart buildings,” Meyer says.

Today, the group has a staff of over 175 at its five sites and an annual turnover of around 20 million euros. Meyer believes his strategy of specializing in difficult markets through independent subsidiaries and involving leading members of staff as co-partners is a decisive factor in his company’s development to become a prominent medium-sized enterprise. In Meyer’s own words: “Good human resource management is essential. If that succeeds, everything else simply falls into place. I was always lucky and had a knack for choosing my staff.”

It is not only technological innovations that determine sustainability in the everyday running of a company: social aspects and entrepreneurial responsibility also play an important role. "Humaneness in a technological environment" is the slogan which illustrates the social aspects of sustainability. Meyer sees his employees as his greatest asset and attaches considerable importance to a good working atmosphere, job satisfaction and to providing his staff with opportunities to develop their potential.

"We want to be innovative, but at the same time we want to support processes of awareness-building."

Harald Meyer, founder of the Meyer Group

This approach has paid off in terms of skilled staff. Meyer focuses on supporting and developing the potential of his own staff. Holistic personnel development is the magic formula which helps the group to find and retain good skilled staff. Meyer also makes an effort to integrate leading members of staff as co-partners or managing directors in new company structures at an early stage. He adopts the same attitude towards his company's trainees as towards employees at skilled and managerial level. Trainees have excellent prospects of being taken on after completing their training and good opportunities for developing their potential.

The Meyer Group has been working in the field of energy technology since 2000, specializing in solar energy and energy optimization. It has made a major contribution to the success of Germany's energy revolution by installing more than 1,500 solar power plants in northern Germany. Furthermore, the Group has recently started to cooperate with a regional energy supplier on a marketing project for new storage systems.

Harald Meyer recalls the beginnings of his success story: "We began with very small plants and were often ridiculed." Renewable sources of energy were an absolute niche area fourteen years ago. But Meyer saw his opportunity and always kept an eye on the bigger picture. He didn't and still doesn't focus on pure technology. His first and foremost interest is in the question of which technology can be used most effectively: for example, when it is a matter of saving energy and the efficient management of electricity use. This is possible through improved insulation technologies as well as through automated processes inside the building – a system that is easy to use and optimizes energy consumption.

Instructor and trainee reading a measuring instrument.

For some years now, Meyer and his staff have been advising firms and private customers on how to introduce "networked thinking" and on holistic solutions to promote sustainability in the energy sector. Meyer is well aware that there is still a lot of work to be done. His motto is: "We want to be innovative, but at the same time we want to support processes of awareness-building." For example, today's photovoltaic systems cost barely a quarter of what customers paid six or seven years ago.

As far as Harald Meyer is concerned, economic aspects are one argument, social responsibility another. Social responsibility does not only apply to his members of staff and their families or to his customers and suppliers but also includes his social commitment as an entrepreneur. Meyer believes that every company has a social responsibility. Otherwise society would not function smoothly. He would like to see every individual make use of this responsibility to the best of their ability.

The Meyer Group conducted a sustainability check in 2013 to ascertain the effectiveness of sustainability in the company's everyday operations. This measure was intended to ensure that the process is not just a passing fad but makes continual progress. Meyer knows that sustainability is not easy to sell. It requires an open and consistent effort, day after day. Any entrepreneur who is content to rest on his achievements is already on the back foot.

Keeping an eye on tomorrow's world today

The energy revolution is one of the greatest challenges of our day and age. It calls for the use of new technologies and stimulates the discussion on topics such as energy efficiency and smart supply systems. The example of the Bundestechnologiezentrum für Elektro- und Informationstechnik (BFE – Federal Technology Centre for Electrical Engineering and Information Technology) in Oldenburg shows that it also affects vocational training.

The BFE was established in 1947 as a school for training master craftsmen in the electrical trades. Today, it is a competence centre for career advancement and continuing education in electrical engineering and information technology. The BFE's Director, Thorsten Janßen, emphasizes that the traditional and the modern are not mutually exclusive. He often tells people graduating from the centre that in five years' time they will be handling products which don't even exist today. The BFE focuses on how technologies are developing in the electricity sector so that it can teach its students the technologies of tomorrow.

This means that sustainable work and management processes are part of Janßen's everyday routine. "The aim is to train our students to think and act sustainably. This is the key to their professional future. The skilled trades must think ahead if they want to be able to act holistically and keep an eye on the future."

There has been a tremendous increase in demand for training in sustainability since Germany introduced its new energy strategy. What industry needs is networked thinking and action with all-rounders who are familiar with all the various technological disciplines

Trainees working on electronic components: Technology is developing rapidly.

"The aim is to train our students to think and act sustainably. This is the key to their professional future."

Thorsten Janßen, BFE Director

and who are able to liaise between different specialists and manage projects successfully. Students at the BFE acquire holistic system expertise as well as overarching skills at the interface between trades. They learn to not just see individual details but to view the entire system and the way it functions, for example in the context of energy use in buildings.

Thorsten Janßen stresses, "It is a matter of depicting complex matter in simple terms." The BFE has therefore developed a training course in association with Oldenburg University. Successful students qualify as "Specialists in Renewable Energies and Energy Efficiency". The training module, which the BFE has been offering for two years now, focuses primarily on the question of what qualifications are required to master the transition to renewable energy.

The results of the first courses show that the scheme is a success. The feedback from participants is positive and there is a great demand from companies working in the sector. Many chambers of crafts have realized how important it is to encourage sustainable management and cross-trade qualifications.

The path has not always been easy at the BFE itself. Although staff members were convinced from the start that they were doing the right thing, the new approach demanded a new mindset. Janßen admits that he too had to adapt in order to teach holistic methods. His wish for the future is that the BFE's course will provide a sustainable contribution to the success of Germany's energy revolution.

The quality of the work is just as decisive as planning, counselling and the choice of materials. Only façades which have been built meticulously can provide efficient insulation.

When sustainability is more than a mere façade

The job profile of a plasterer has undergone considerable changes in recent years – like jobs in the building trade as a whole. Companies must be prepared to tackle current challenges and look towards the future if they are to remain attractive for customers and trainees alike. The Besemer Ausbau und Fassade GbR in Kohlberg, Baden-Württemberg shows how this can be done.

Christina Besemer and her sister Petra have been in charge of this third generation family business, founded in 1930, since 1998. Besemer is a master plasterer and energy systems consultant. Apart from dealing with questions of façades and interior fittings, she also tackles issues of energy efficiency and CO_2 reduction. She focuses entirely on sustainability, both with regard to the materials she uses as well as when training staff and working with clients.

"The market for building materials has changed rapidly over the last 50 years," she says. "There are so many different materials available today and it is increasingly important to know how to use them. It is a question of knowing what materials are most suitable for reducing emissions of CO_2 in new or renovated buildings and for avoiding damage to the buildings themselves."

For companies, this means that staff members require continuous training. According to Besemer, we no longer have the situation where people have learned everything they need to know once they have completed training. Now they need to be able to think outside the box of their own trade to ensure viable results. Holistic thinking is needed to find solutions, particularly at the interfaces between different trades.

The energy balance of residential buildings is an extremely complex topic. An important part of Christina Besemer's work is to provide expert advice: "As an energy systems adviser, I deal with energy efficiency on a daily basis. This may involve considering a building as a whole or assessing technical equipment. I work very closely with my clients from the very start. We discuss overall planning measures as early as possible and I advise the client on how to implement the individual measures step by step."

The small family firm has been dealing with energy and saving energy for many years now. The first composite heat insulation system was introduced in the mid-1980s and was something completely new in those days. This innovation prompted master plasterer Christina Besemer to acquire additional qualifications as an energy expert and energy systems adviser, enabling her to take a holistic view of a building.

> *"There are so many different materials available today and it is increasingly important to know how to use them."*
>
> Christina Besemer, master plasterer and co-owner of Besemer Ausbau und Fassade

As far as Besemer is concerned, sustainability means more than just saving CO_2. She considers it important to protect the health of the occupants by selecting the appropriate building materials. During her training she gained an extensive insight into the world of things that are detrimental to human health – radiation, for example. She passes this knowledge on to her staff and clients to encourage them to consider or even rethink their consumer behaviour.

As a rule, a project begins with detailed consultations. Christina Besemer invests a lot of time and effort in this important part of her work because she knows: "A client who has received sound advice is more likely to have the work done."

Besemer considers staff training to be just as important as providing customers with sound advice. She attaches great importance to teaching trainees to join the dots. For example, when plastering around a window jamb it is essential to check that the window is connected to the wall so as to be airtight. A so-called "blower door test" is performed to ascertain whether the interior fitting work has been completed properly. This involves documenting the air tightness of the building and providing information about any weak spots. In this way trainees can see whether their work reaches the required standards.

Master plasterer Christina Besemer and the site foreman discussing a construction plan.

Besemer is convinced that the skilled trades will have to rethink their training. She believes that it is difficult to reach out to today's young people because they associate the skilled trades with dirt, grime and dust instead of with technical know-how. Young people need theoretical knowledge as well as new incentives and challenges. Besemer says: "We need to link the old with the new, practical aspects with know-how and customer orientation. The sooner we encourage contextual thinking and the desire for knowledge, the more motivated our trainees become."

Lifelong learning and an interest in innovations are a decisive argument as far as Besemer is concerned. At school she was always fascinated by the words: "He who sees more knows more. He who knows more sees more." This fascination continues, prompting Besemer to constantly busy herself with new products and ideas. She likes to keep up to date with developments and to even be a pioneer: for example, by using the "SunAir" ventilation system, which was developed by the Baden-Württemberg Competence Centre for the Plastering Trade (KOMZET). Besemer favours this system, which is installed in the façade and uses solar energy to preheat the outside air entering the building. This minimizes heat loss and optimizes the building's energy balance.

Sustainability provides a competitive edge which Besemer wants to build on in future. At the same time, she seeks to reconcile sustainability and aesthetics. She firmly believes that beauty and energy efficiency go together very well.

A breath of fresh air for the region

The Vocational Schools in Cuxhaven (BBS Cuxhaven) began to consider issues of sustainability around ten years ago when the question of becoming a regional competence centre was first raised. Sustainability was an important focus which has meanwhile found its way into various areas of everyday school operations.

Rüdiger Koenemann, head of the BBS Cuxhaven for the last three years, emphasizes that the speed with which the world of technology is changing is a huge challenge for vocational schools. The school must tackle this situation and design its teaching and methodical approach to ensure that trainees are well prepared for the future.

The BBS's aim is to provide its 2,400 students with practically relevant, action-based courses that include aspects of sustainability. Take, for example, the topic of wind energy: at the BBS, construction mechanics, precision machinists and electronics technicians specializing in energy and building technology all learn about the mechatronics of wind turbines. The result is an attractive, wide range of courses for trainees. This is also an important stimulus for the town of Cuxhaven, which has seen an exodus of young people in recent years.

Trainees at the BBS Cuxhaven learn the practical foundations of mechanics, construction and electronics in the school's training workshop.

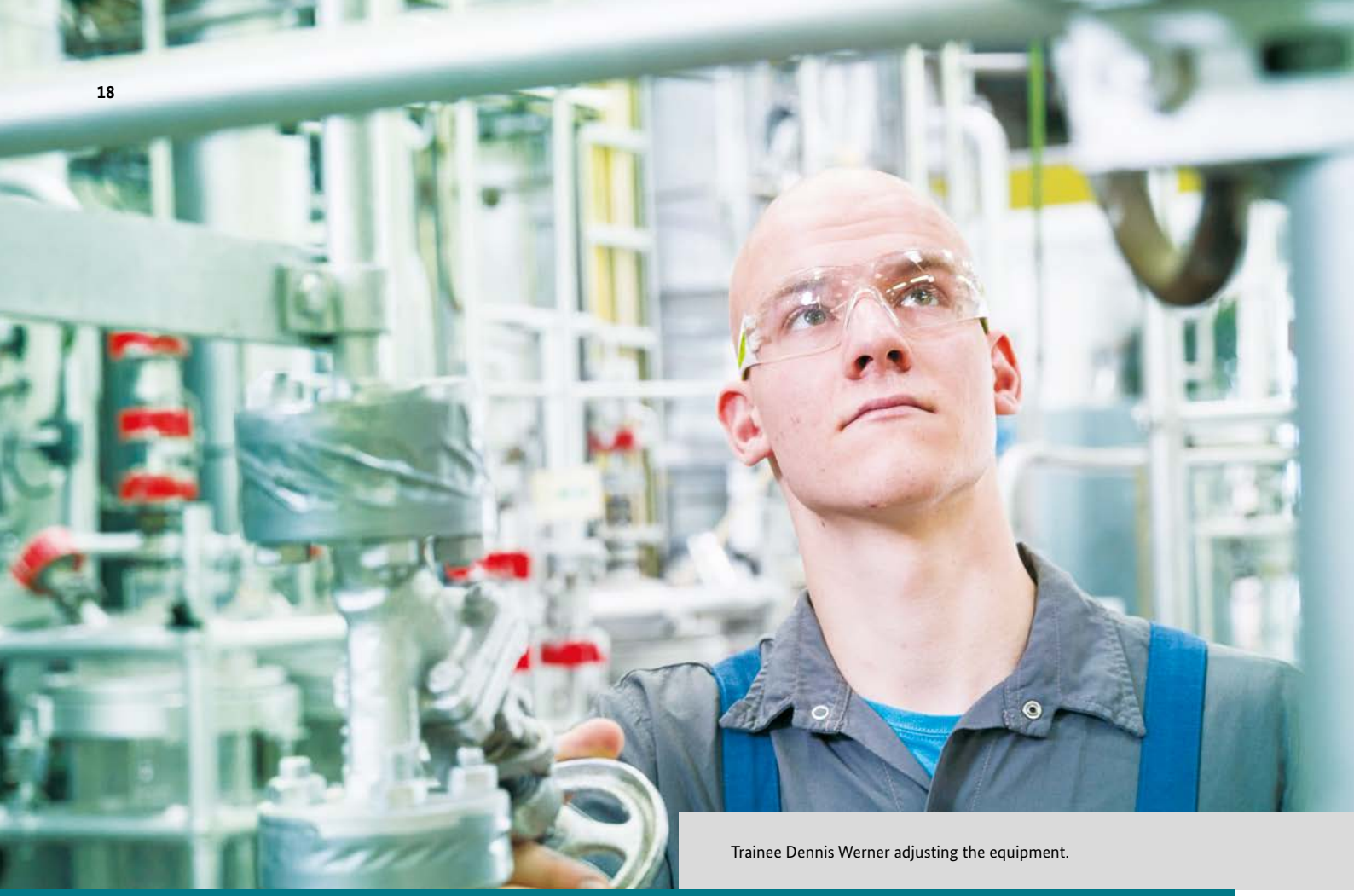
"Sustainability is both an image and site factor as far as we are concerned."

Rüdiger Koenemann, head of the BBS Cuxhaven

"Sustainability is both an image and site factor as far as we are concerned," says Koenemann. "This is shown by the increasing number of people applying to our type of school as well as by the positive feedback from industry in the region." An important factor in this context is that the BBS is one of 20 innovation and future centres in Lower Saxony covering the key areas of innovative energy and utility engineering as well as energy efficiency and alternative propulsion systems in automotive technology. These synergies have made it possible to procure modern measuring instruments and laboratory equipment and to offer attractive continuing training programmes for companies in the region.

The BBS is also active with regard to offshore skills. It was involved in a pilot scheme devoted to the skills required by offshore specialists. Koenemann sums up the school's commitment: "We want to ensure that specialists in this field are well trained. We are therefore cooperating closely with organizations that are responsible for promoting economic development in the city and region with a view to shaping new developments and supporting the process of regenerative energy production."

Koenemann and his team want the BBS itself to become a sustainable place of learning and work and are constantly optimizing processes within the school with regard to energy and resources consumption. Examples here are the school's own hybrid car and the use of energy sources such as solar plants and a photovoltaic system on the school's roof.



Trainee Dennis Werner adjusting the equipment.

“I wanted concrete sustainability!”

How trainees in the chemical industry learn to work sustainably and responsibly.

The Chemical Industrial Park in Hürth-Knapsack is surprisingly green. Instructor Bernd Bartsch sits in his office between a rubber plant and a palm tree with an eye on his “swimming pool”. The “swimming pool” is the production centre of the RHEIN-ERFT ACADEMY and he has just thrown his protégées into cold water. They have a week to learn how to stand on their own two feet.

“Around the Clock – 24 Hours Real Time” is the title of the project at the end of which they are to have produced, ready for transport, 25 kg of diammonium hydrogen phosphate, a plant fertilizer. Around 50 trainees from different vocational fields are working on this interdisciplinary project in three shifts around the clock from Monday to Friday. Teams consisting of trainee chemical technicians and trainee industrial mechanics, for example, are having to organize their work across their individual trades. They are responsible for planning and performing their own work, with instructors only playing an advisory role in the background.

Bernd Bartsch is responsible for sustainability at the RHEIN-ERFT ACADEMY. He helped to initiate the project under the pilot scheme “Sustainable Educational Careers in the Chemical Industry (NaBiKa)”.

At mid-day on Tuesday there are already twelve neatly labelled 500 gram parcels of white powder on the table outside Bartsch’s office waiting to be quality checked. He examines the parcels critically. “Look, this is powdery but much too damp. The smell of ammoniac is still too strong. No one would buy this.” Mischievously he adds: “They’ll have to dry it – but they’ve got to come up with that idea themselves!”

A major aim of the project is learning to accept responsibility – for resources and products, but also for efficient communication and successful interaction with colleagues. Trainees can experience and test what the concept of "Responsible Care" means in practical terms. "Responsible Care" is an initiative of the chemical industry to encourage responsible action in the fields of the environment, safety and health. The trainees not only learn specialist skills, they also develop important personal capabilities.

"Sometimes you just need a different mindset."

Bernd Bartsch, instructor and Head of the Technikum at the RHEIN-ERFT ACADEMY

Shift change: Colourful liquids bubble in large glass flasks. Trainees in blue overalls exchange views with trainees in white coats. The next shift must be informed about the successes or problems of the previous shift in order to avoid any delays or loss of quality in the production process. A sustainability protocol was drawn up at the very beginning of the project. For example, the ethanol needed to produce the fertilizer is to be recovered and re-used.

Trainee Dennis Werner explains: "Sustainability is very important in the chemical industry. One cannot simply let gases off into the air and leave the neighbour to suffer. We can minimize our waste if we recover base materials such as ethanol. Sustainability also means ensuring that no information is lost when we change shifts." The project ends on Friday afternoon with a final round of feedback. The entire team discusses what has gone well or less well and what they could do better next time.

Prior to the project, the trainees completed several modules on the topic of sustainability and learnt the meaning of sustainable development as well as how to minimize dangers and use energy, water and other means of production sparingly. The trainees receive a certificate as experts in sustainability and return to their training companies with the aim of encouraging their colleagues and bosses to take an interest in sustainability. They use YouTube to explain to other trainees how sustainable chemistry works.

Bartsch admits that he personally got involved in sustainability more or less by chance. Sustainability was suddenly topical and "someone had to do it". But he was soon hooked and today he passes his knowledge and experience on to his trainees with genuine enthusiasm. "Sometimes you just need a different mindset," he says.

Bartsch has already organized many project weeks. His trainees have produced chalk, gypsum and now the fertilizer. "I wanted concrete sustainability!" Only substances and materials that are not reusable or recyclable land in the rubbish bin. Products such as gypsum are offered to plasterboard manufacturers. Trainee Dennis Werner is delighted that "the product we make is actually used. This makes the whole thing sustainable!"

Bernd Bartsch giving trainees in the “Around the Clock” project final instructions. They will have to master the one-week production line themselves.

And what’s next? “Oh, I’ve got so many ideas for things we could do on an interdisciplinary basis,” says Bartsch. “Nevertheless, it is important that we follow the principle of small steps rather than tackling big projects. We have just set up an alumni portal, a network to safeguard our knowledge. We are doing a great deal but we are still not the “kings” of sustainability.” It might not be a “king” but certainly a “prince” who rules over the green Chemical Industrial Park in Hürth-Knapsack.

“Sustainable thinking and efficient leadership”

How the catering services at Henkel encourage trainees, staff and guests to adopt sustainable working and eating habits.

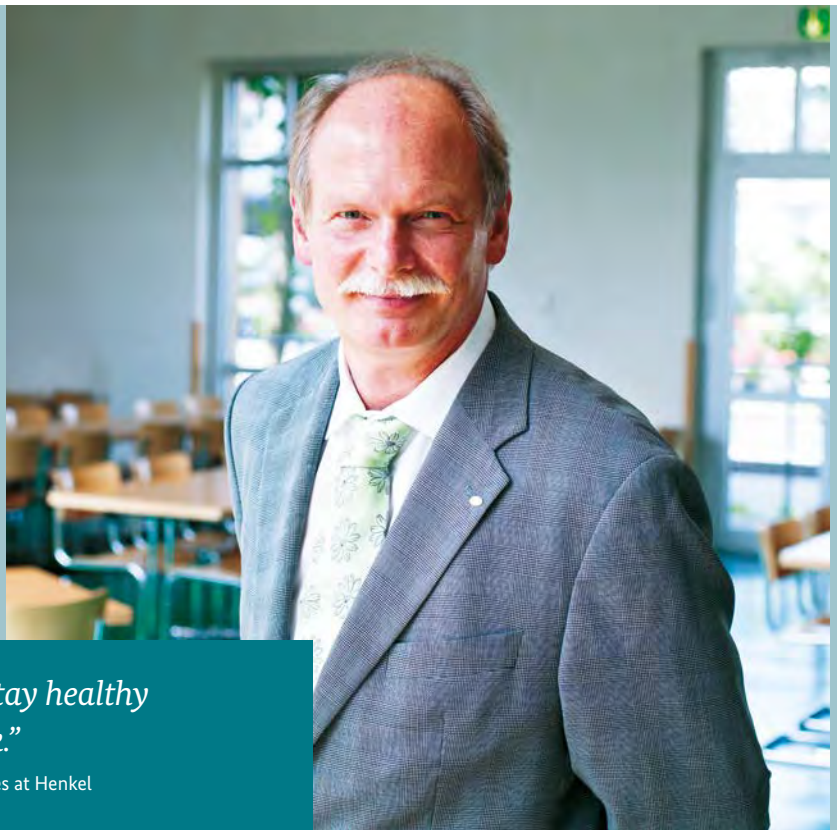
This man simply loves food. His eyes light up when he talks about organic potatoes and cream cheese with rocket. Every day Christoph Reingen, head of the catering services at Henkel, shows around 5,000 guests that sustainable food can be both healthy and tasty. Staff and trainees support his efforts.

Reingen is aware that “the quality and flavour must be right; otherwise people will stay away.” As far as he is concerned, quality means seasonal and regional products, fish from sustainable stocks and freshly prepared dishes. Reingen intends to increase the share of organic food served at Henkel and has therefore taken a certificate in organic catering.

Reingen was once a chef in a starred restaurant. No wonder that his guests at Henkel enjoy his goat’s cheese with mango-mustard dressing or his vegan sausages. His best-seller is a mixed salad, not sausage in curry sauce like in other canteens. Reingen is convinced that eating sustainably is healthy. Eating conventionally produced pork means eating antibiotics, for example. This is why Henkel only serves pork from animals raised organically. The food dispensers with snacks for shift workers also offer many healthy products. “People who eat healthily stay healthy and have fewer days off sick” is one argument that also counts with the company’s management.

Sustainability in a company canteen must also be economical. The central question focuses on the “right way”. The “right way” means that both the environment and economic efficiency profit from sustainability: one can save and protect resources by consuming less water and energy as well as by using energy-efficient kitchen equipment and producing fewer leftovers.

Sustainable cooking begins with the right ingredients: Trainee Max Neumann preparing food in the canteen kitchen with kitchen manager Kurt Bernert.



"People who eat healthily, stay healthy and have fewer days off sick."

Christoph Reingen, head of the catering services at Henkel

Kitchen managers Kurt Bernert and Dennis Gasper explain that they involve their young trainees in all these measures: "Every trainee is a multiplier – internally and externally." The kitchen managers are "ambassadors for sustainability" in the company. Their aim is not to force people to change their habits but to provide them with relevant information. For example, the "green priority" food labelling system enables guests to recognize the nutritional value of individual dishes at a glance. Max Neumann, a second-year catering trainee confirms, "You can't miss it". He was confronted with the message of sustainability from the very beginning of his training.

Reingen is particularly keen to integrate sustainability in company catering in general. As a member of the examination board for master chefs at the Chamber of Industry and Commerce, he asks questions on sustainable procurement and products in the exams. He also cooks regional and seasonal products with trainees at vocational schools. He believes that these young people will take the message to companies.

An interest in sustainable nutrition is also a criterion when selecting staff. The kitchen managers themselves undergo continuing training in the "Bio-Gourmet-Club".

"You have to love what you're doing," says Reingen. "Then everything falls into place."

Funding pilot schemes for Vocational Training for Sustainable Development – Notes and background information

The interview partners took part in the "Vocational Training for Sustainable Development" priority area, which was funded by the Federal Institute for Vocational Education and Training (BIBB) between 2010 and 2013. The Federal Ministry of Education and Research (BMBF) provided the pilot schemes with funds totalling three million euros. The BIBB is now funding further pilot projects within the framework of the "Education for Sustainable Development" global action programme under the new priority "Vocational Training for Sustainable Development 2015 to 2019". The BMBF is making a further six million euros available for the new funding priority.

The pilot projects were in the areas of Metalworking/Electrical Engineering, Construction/Living, Chemistry and Nutrition and ran from 2010 to 2013. In order to encourage sustainable development in these areas they:

- **identified and analysed qualification requirements,**
- **developed curricula**
- **and formulated learning modules for the training process.**

The jury of the National Committee of the UN Decade of Education for Sustainable Development declared the "Vocational Training for Sustainable Development" funding priority an official German measure of the UN Decade.

The individual and collaborative projects in the four sectors Metalworking/Electrical Engineering – with the focus on renewable energy sources –, Construction/Living, Chemistry and Nutrition have produced the following results:

- The "Offshore Skills" pilot project of the Institute of Technology and Education at Bremen University studied and defined core work processes. Apart from making use of the results in continuing training measures, the project team also recommends introducing an occupational profile "mechatronics technicians for wind turbines".

- The information platform for electric mobility and renewable energies, which was developed by the Institute for SME Research at Mannheim University and the MetropolSolar Rhein-Neckar e.V., provides the first overview of all training and continuing training courses and offers users valuable guidance when seeking qualifications.

- Oldenburg University and the Federal Technology Centre for Electrical Engineering in Oldenburg have designed a further training course for "Specialists in Renewable Energies and Energy Efficiency" which teaches skills in providing customer advice, energy-technology know-how and new business activities.

- Münster University of Applied Sciences and Münster School of Vocational Education have developed a comprehensive framework curriculum modernizing teaching content for vocations in the fields of nutrition and home economics based on the criteria of sustainable mass catering.

- The RHEIN-ERFT ACADEMY in Hürth has developed guides for training and continuing training processes in the chemical sector and has issued recommendations for training certified industrial supervisors. These provide information on the practical implementation of sustainable development in the chemical industry.

- Links between the trades involved in the areas of construction and living have been newly defined in the context of energy-efficient building. The KOMZET Building and Energy network – a network of competence centres in the building industry – has developed new teaching models aimed at improving the quality of construction work.

Pilot schemes will be funded under the "Vocational Training for Sustainable Development 2015 to 2019" funding area in two funding lines beginning in 2016

- **Funding line 1: Development of teaching and learning strategies for sustainability in commercial trades.**

- **Funding line 2: Designing sustainable learning venues in vocational training establishments, developing indicators.**

In addition to this brochure, a further publication is available in which practitioners and cooperation partners in companies and vocational schools explain how they implement sustainable development in their individual vocations:

- **Infoflyer "Berufsbildung für nachhaltige Entwicklung" – Warum nachhaltiges Arbeiten und Wirtschaften modern, innovativ und zukunftsweisend ist: Statements der Praktiker (March 2014), Bundesinstitut für Berufsbildung (Ed.)**

There are also the following joint publications on the funding priority:

Themenheft "Berufsbildung für eine nachhaltige Entwicklung" in: berufsbildung – Zeitschrift für Praxis und Theorie in Betrieb und Schule, 141: Erste Ergebnisse aus den Modellversuchen (June 2013), Remann, Karin; Friese, Marianne (Ed.);

- **Broschüre der Infoblätter der sechs Modellversuche im Förderschwerpunkt – Kernergebnisse aus der Sicht der Modellversuche, der Programmleitung und der wissenschaftlichen Begleitung (November 2013), Bundesinstitut für Berufsbildung (Ed.);**

- **Berufsbildung für nachhaltige Entwicklung – Modellversuche 2010–2013: Erkenntnisse, Schlussfolgerungen und Ausblicke, Berichte zur Beruflichen Bildung, Bonn 2014, Kuhlmeier, Werner; Mohoric, Andrea; Vollmer Thomas (Ed.).**

These publications together with the products and material developed in the course of the pilot schemes are available as teaching guides or in book form or may be downloaded from the project websites and the website of the BIBB (Modellversuche **BBNE: https://www.bibb.de/de/709.php, https://www.foraus.de)** or the German Education Server. The results and products of the new pilot schemes will be published accordingly.

Information on the global action programme and the UN Decade is available at **http://www.bne-portal.de**

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Published by
Federal Ministry of Education and Research (BMBF)
Division Career Orientation; Equal Opportunities for Young People
53170 Bonn

Orders
In writing to
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P.O. Box 48 10 09
18132 Rostock
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or by
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2nd updated edition: February 2016

Printed by
BMBF

Layout
BMBF

Photo credits
BFE Oldenburg: Page 12
Robert Funke: Cover page, Pages 1–11, 13–30
Press and Information Office of the Federal Government,
Steffen Kugler: Preface

Edited by
Andrea Mohoric (Concept and editing)
Budde & Göhring GbR, Köln
Manfred Kasper, büro für journalismus & pr, Köln
Lydia Pege

www.bmbf.de